CHP
EPA COMBINED HEAT AND POWER PARTNERSHIP

EPA's Combined Heat and Power Partnership

Combined heat and power (CHP), or cogeneration, involves recovering waste heat from power production and using it for local heating and cooling needs. Because CHP is highly efficient—generating electricity and thermal energy from the same fuel source—it reduces the amount of fuel that is burned, which lowers air pollution. The U.S. Environmental Protection Agency (EPA) established the Combined Heat and Power Partnership to promote and expand the use of CHP in the industrial, institutional, and commercial sectors.

Why Promote CHP?

The average fossil fuel power plant in the United States is only 33 percent[1] efficient—two-thirds of the energy used to generate power is vented as waste heat. CHP can more than double that efficiency, thereby reducing the amount of fuel burned, and pollution created, per unit of energy. CHP also saves dollars, improves the reliability of the electric grid, and reduces power transmission losses. For these reasons, businesses and governments have installed more than 50,000 megawatts (MW) of CHP capacity in the U.S.—making CHP a proven pollution reduction technology. However, significant opportunities remain.

What Is the EPA's CHP Partnership?

The CHP Partnership is a voluntary EPA-industry effort designed to foster cost-effective CHP projects. The goal of the partnership is to build a cooperative relationship among EPA, the CHP industry, state and local governments, and other stakeholders to expand the use of CHP. Industry Partners include energy users in the industrial, commercial, district energy, and institutional sectors, as well as project developers and equipment suppliers. State and Local Partners include state and local energy, environmental, natural resources, and economic development agencies.

What Are the Benefits of Joining the Partnership?

A variety of benefits are available depending on the organization.

Energy Users. Potential CHP users include industrial plants, commercial or institutional buildings, internet and telecom data centers, district energy systems, and light industrial power parks. These users can use CHP to generate clean, reliable power, as well as for heating and/or cooling. The Partnership provides energy users with hands-on technical assistance in evaluating the efficiency and emissions performance of a variety of CHP project designs. The Partnership also offers permitting assistance to help guide the project through a variety of local, state, and federal requirements. Finally, the Partnership offers public recognition to those companies that demonstrate environmental leadership by installing clean, efficient CHP systems.

CHP Project Developers and Equipment Suppliers. By supporting potential CHP energy users and government regulators, EPA will help to expand the market for developers and equipment

[1] "Transforming Electricity," Thomas R. Casten and Sean T. Casten.

suppliers. In addition, CHP partners will benefit from the partnership's other market development tools, permitting guidance, networking, and project recognition.

Distribution Utilities. In areas of electric grid congestion, or areas where electricity demand exceeds the supply, distribution utilities can benefit from working with EPA to identify energy users that can implement CHP systems in strategic locations. These projects help eliminate load pockets where the grid is congested and offer grid support at times of heavy demand.

Power Generators. Power generators can use the CHP Partnership to network with customers with large thermal demands that might be partners for future CHP projects. Thermal hosts produce a steady revenue stream and can be the source of low-cost byproduct or waste fuels to supply new CHP applications. CHP projects are common in many industries, including petroleum refining, pulp and paper, and chemicals.

State and Local Governments. Using CHP to improve the efficiency of the energy sector helps state and local governments meet energy and air-quality goals. In addition, in city centers, CHP can provide low-cost energy to support economic development objectives. EPA's CHP Partnership helps to bring the full range of industry partners to State and Local Partners, and also offers assistance in siting CHP facilities at brownfields sites.

How the Partnership Works

Partners work with EPA to promote the economic, environmental, and energy infrastructure benefits of CHP and support the development of new CHP capacity. In return, EPA provides tools and services that support Partners as they investigate and develop new CHP capacity. Specific Partner responsibilities include:

Industry Partners. Industry Partners agree to work with EPA to assess the potential for additional CHP development at their facilities. Partners also agree to work with EPA to publicize the energy, environmental, and economic benefits of their projects, and to provide EPA with minimal operational data to allow EPA to evaluate the partnership's success at reducing emissions through higher efficiency.

State and Local Partners. State and Local Partners agree to host a CHP workshop to promote the benefits of CHP and support development of new projects within their state. Partners also agree to review EPA-produced state data and analysis, including a document that outlines state and local regulations that may affect CHP project development. State and Local Partners serve as key EPA liaisons as we provide project-specific assistance.

What Tools and Services Does EPA Offer?

EPA is developing tools and services for all Partners. These services fall into five categories:

Market Development

- Profiling CHP potential in targeted states
- Facilitating networking between energy users, project developers and regulators

Public Recognition

- Project recognition through our ENERGY STAR® CHP awards and certificates
- Press releases, project ribbon-cutting ceremonies, and public awareness campaigns

Outreach and Education

- Printed and web-based materials
- National and state workshops

Technical Assistance

- Hands-on project-specific assistance
- Catalogue of CHP technologies, including efficiency and emissions characteristics
- Project-specific feasibility analyses
- Emissions analyses

Regulatory and Permitting Support

- Recognition of CHP's environmental benefits in regulations
- Project-specific permitting assistance
- Permitting guide book

For More Information

For more information about the EPA's CHP Partnership, including how to join, contact:

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